DSP AUDIO PROCESSOR
HIDE-AWAY UNIT

PROCESSEUR DE SIGNAL
NUMERIQUE (DSP) DEPORTE

OWNER'S MANUAL
MODE D'EMPLOI

Thank you for purchasing this PIONEER product. Before attempting operation, be sure to read this manual.

Grazie per aver acquistato questo prodotto PIONEER. Leggere attentamente queste istruzioni prima di usare questa unità.

Nous vous remercions d'avoir acheté cet appareil PIONEER. Avant de l'utiliser, prendre soin de lire ce manuel.

Vielen Dank für den Kauf dieses PIONEER Produkts. Diese Bedienungsanleitung vor der Inbetriebnahme sorgfältig durchlesen.

Dank U zeer voor de aanschaf van dit PIONEER-produkt. Lees deze gebruiksaanwijzing goed door, voordat het toestel in gebruik genomen wordt.

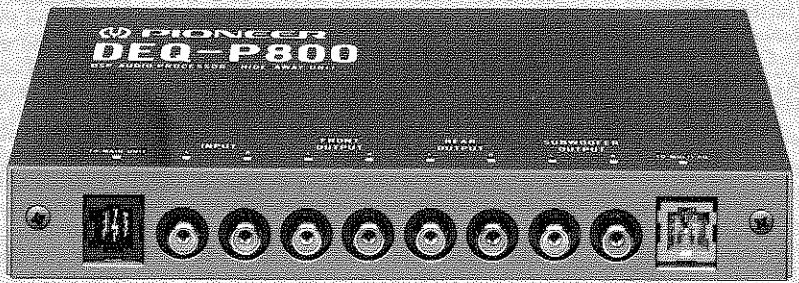
Muchas gracias por la adquisición de este producto PIONEER. Antes de tratar de operarlo, lea atentamente este manual.

Vi tackar dig för att du valt denna PIONEER-produkt. Läs först igenom denna bruksanvisning innan apparaten tas i bruk.

Takk for kjøpet av dette PIONEER-produktet. Les denne bruksanvisningen grundig før du tar apparatet i bruk.

Kiitos PIONEER-tuotteen hankinnasta. Ennen käyttöä pyydämme kuitenkin lukemaan huolellisesti tämän käsikirjan.

SPARE PARTS MASTER



PIONEER®

The Art of Entertainment

DEQ-P800

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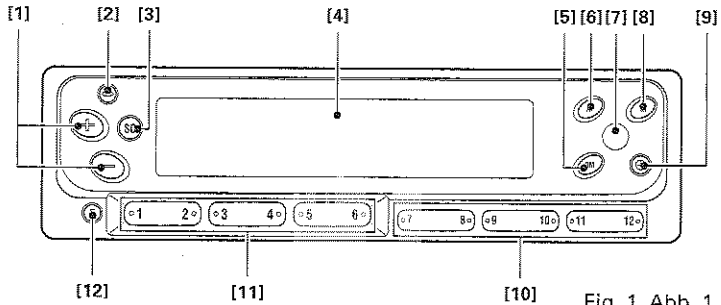


Fig. 1 Abb. 1

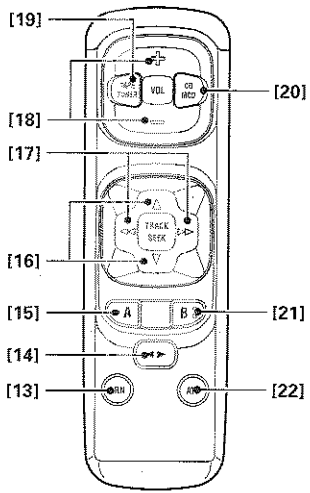
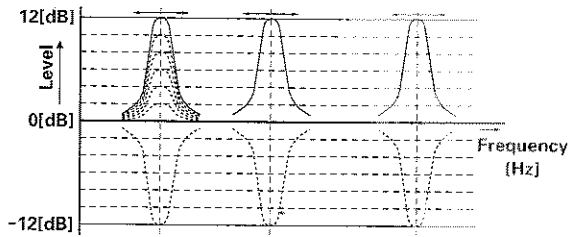


Fig. 2 Abb. 2



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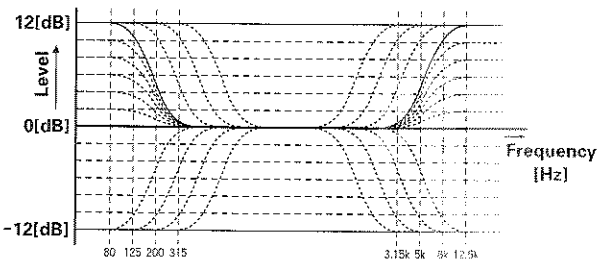

Fig. 4 Abb. 4

Precautions

In case of trouble
When the unit does not operate properly, contact your dealer or the nearest authorized PIONEER Service Station. Never disassemble the unit to attempt check or repairs yourself.

Connection of this unit and Head Unit

- This unit can be used with the following Head Units only.
  KEH-P9200RDS, KEH-P8200RDS, KEX-P820RDS and DEH-P815RDS (Fig. 1)
- When using with either the KEH-P9200RDS or DEH-P815RDS Head Unit, please ensure that the MAIN IN switch of the Head Unit is placed to the MAIN IN position. (Refer to Head Unit Installation Manual for further details.)
- When using with the above Head Units, please place the Remote Control switch (Fig. 2) to the MAIN UNIT position. (Refer to Head Unit Owner's Manual for further details.)

Digital Signal Processor (DSP)

DSP function

The DSP function of this unit provides reproduction of real sound fields and corrects the acoustic characteristics in the vehicle so that an ideal listening environments can be created. The DSP consists of the SFC (Sound Field Control) function to reproduce live sound fields, the digital equalizing function to adjust the front and rear speakers frequency response separately, and the listening position select function to control the sound image according to the seating arrangement of the passengers. The DSP uses these functions simultaneously to obtain rich sound fields and superb acoustic characteristics.

Sound Field Control (SFC)

Sound varies according to the size and shape of listening locations. For example in concert halls, the length and quality of the direct sound, initial reflection and reverberation highly vary. The SFC function, programs reproduce 5 typical sound fields such as that of a Concert Hall and that of a Studium. Therefore, you can listen to your music, as if you where in one of this places. (See page 6.)
In addition "Audition", a sing-along feature, is also included. (See page 11.)

Digital Equalizer

Parametric Equalizer (P.EQ) (Fig. 3)
In the vehicle, irregular sound reflection is caused by its size, shape and material. As a result, peak (emphasis) and dip (attenuation) will be produced in the frequency characteristics of the sound from the speakers. The P.EQ can correct this phenomenon. This allows the acoustic characteristics in the vehicle to be corrected. 3 variable frequencies from 16 frequency points can be selected to adjust the front and rear speakers separately.
(See page 7.)

Parametric Bass/Treble (B/T) (Fig. 4)
When 4 speakers are used in the car audio system, adjusting sound quality for the 4 speakers all at once is not always an effective way. The B/T function controls the front and rear speakers separately. The system can adjust the mid and high ranges for the front speakers and the low range for the rear speakers. As a result, clear vocal sound can be localized to the front position.
(See page 9.)

Listening Position selector (POSI)

The POSI function allows you to adjust the delay time and level of the sound from respective speakers according to the seating positions and the number of passengers by simply pressing a button. Using this function with the SFC function produces natural listening positions. You can feel a rich sound field as if music wraps around your body.
(See page 10.)

Switching the setting modes

As shown in the figure below, the setting modes change in sequence, every time button [21] is pressed.

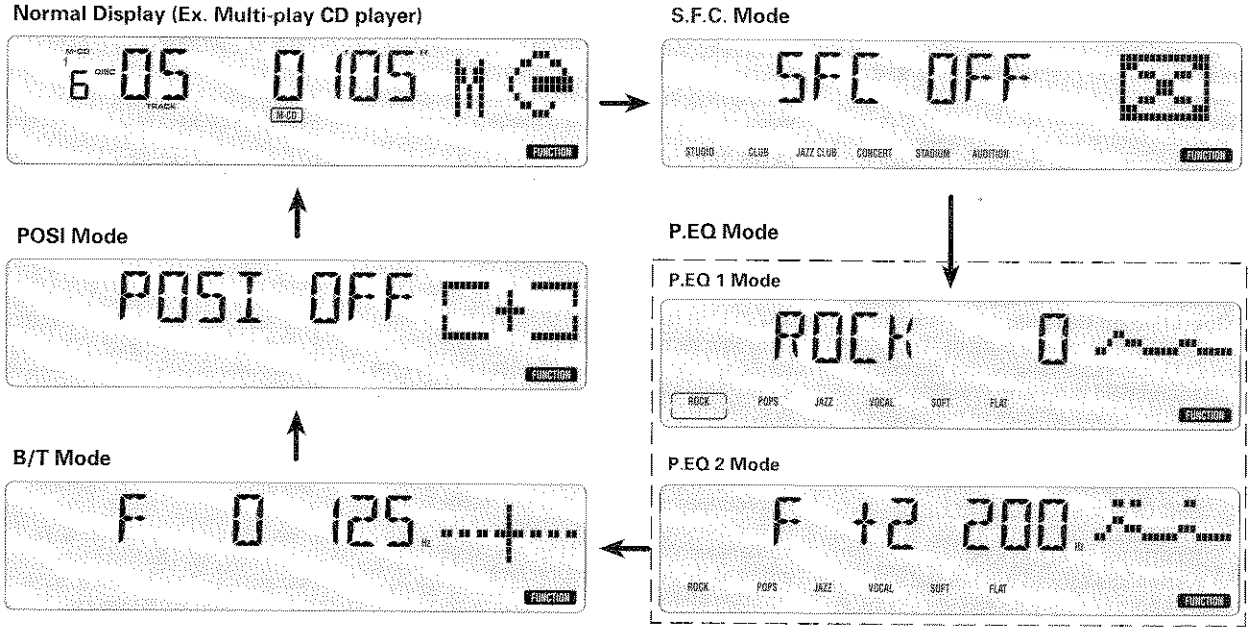

Fig. 5

Using the Sound Field Control (SFC)

Calling the sound field program

The sound field program stored in this unit can be easily called by simply pressing a button.

1. Press the button [21] to change to SFC mode.
(See page 5.)
- This mode will be canceled if no operation is made within 8 seconds. Start performing the subsequent operation within 8 seconds.

2. Call a desired sound field program.
The frame of the sound field program will light up, and the name will be displayed.

Operation on this unit:
Press either one of buttons ① to ⑥ of [11], corresponding to the desired sound field program. Pressing the button again will cancel the program.

Operation via remote control unit:
Use button [17] to change the sound field programs.
SFC OFF ⇄ STUDIO ⇄ CLUB ⇄ JAZZCLUB ⇄ CONCERT ⇄ STADIUM ⇄ AUDITION

- The system changes to the normal display approximately 8 seconds after operation.

Sound field program stored in this unit

For this unit, the following 6 sound fields are stored.

STUDIO (button ①)
Localizes the sound image to the axial sensitivity and does not add reverberation sound. Reproduces basic sound field by processing initial reflection sound from the walls of a relatively small mixing room.

CLUB (button ②)
Reproduces music performed in discos for 50 people. Suitable for reproducing a sound field with facilitated absorption of reverberation and enjoying music with powerful beat.

JAZZCLUB (button ③)
Reproduces music performed in jazz clubs for 50 to 100 audiences. Highly effective for sound sources such as recorded gigs. Provides real reproduction of reflection from the walls and reverberation.

CONCERT (button ④)
Reproduces music performed in classic-music concert halls for 1,000 to 2,000 audiences. Wide and deep sound can be enjoyed through reflection and reverberation.

STADIUM (button ⑤)
Reproduces music performed in outdoor stadiums. Reflection from far walls produces echo sound. The system utilizes this effect to reproduce a dynamic sound field.

AUDITION (button ⑥)
The audition effect can be obtained by DSP. Reproduces a sound field as if you are singing in a place in front of 15 to 20 people. See page 11 for how to use the audition function.
- When Radio is selected, you cannot call the AUDITION sound field.

Using the Parametric Equalizer (P.EQ)

Equalizer curve (P.EQ)

Default equalizer curve (Factory mode) and user-defined equalizer curve (User mode) can be easily called by simply pressing a button.

Applicable button	Equalizer curve	Key guide
Button ①	Rock	ROCK
Button ②	Pops	POPS
Button ③	Jazz	JAZZ
Button ④	Vocal	VOCAL
Button ⑤	Soft	SOFT
Button ⑥	Flat	FLAT

The buttons ① to ⑥ of [11] belong to Factory mode and their equalizer curves are already stored on this unit.
The buttons ⑦ to ⑫ of [10] are User mode (USER1 to 6). So you can call your desired curves after storing them. (See "Storing the equalizer curves" on page 9 for how to store the equalizer curve.)

Calling the equalizer curve

1. Press button [21] to change to P.EQ 1 mode.
(See page 5.)
- This mode will be canceled if no operation is made within 8 seconds. Start performing the subsequent operation within 8 seconds.

2. Call a desired equalizer curve.
The frame of the equalizer curve (Factory mode only) will light up.

Operation on this unit:
Press either one of buttons ① to ⑫ of [10] and [11], corresponding to the desired equalizer curve.

Operation via remote control unit:
Use button [17] to change the equalizer curves (Factory mode).
ROCK ⇄ POPS ⇄ JAZZ ⇄ VOCAL ⇄ SOFT ⇄ FLAT
- Equalizer curve of User mode cannot be called by the remote control unit.

- The system changes to the normal display approximately 8 seconds after operation.

Note:
- During P.EQ 2 mode, the equalizer curve can be selected only by buttons [10] and [11] on this unit.
- In P.EQ 2 mode, the equalizer curve cannot be selected via the remote control unit. To change to P.EQ 1 mode, press either one of buttons of [11] on this unit.

Equalizer curves stored in this unit

For factory mode, the following 6 equalizer curves are stored in this unit.

ROCK (button ①)
Focuses on the band of rhythm section of rock music so that powerful sound can be reproduced with supplemented low and high ranges.

POPS (button ②)
Particularly emphasizes the mid range so that light pops sound can be enjoyed.

JAZZ (button ③)
Compared with ROCK mode, emphasizes the low and high ranges more intensively so that wide-range feeling can be obtained. Suitable to enjoy jazz music in a relaxed environment.

VOCAL (button ④)
Emphasizes the portion of the voice band and minimizes the low range to increase articulation. Use this mode to emphasize vocal signals or when listening to conversation.

SOFT (button ⑤)
Controls stimulating treble and increases soft bass to produce music easy to listen to.

FLAT (button ⑥)
No supplement or correction is made to the sound. A useful function to check the effect of the equalizer curves by switching alternatively between FLAT and a set equalizer curve.

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Adjusting the equalizer curves

The 6 equalizer curves stored in Factory mode can be adjusted (fine adjustment). Adjustment can be made by either using Nuance Control Equalizer (N.C.E.) or 3-band parametric equalizer adjustment.

Nuance Control Equalizer (N.C.E.)

The equalizer curves stored in factory mode can be adjusted at fine level (nuance control).

1. **Call the desired equalizer curve from those stored in factory mode. (however it cannot be adjusted for flat.)**
   (See page 7.)
2. **Use button [16] for fine adjustment.**
   Pressing the (▲) side increases the amount of compensation (increases the difference between high and low levels.) Pressing the (▼) side decreases the amount of compensation (towards flat.) (Display shows "-6" ~ "+6".)
3. **Store the adjusted equalizer curve.**
   (See "Storing the equalizer curves" on page 9.)
   - The adjusted equalizer curve will be reset, if another equalizer curve is called. To preserve the adjusted equalizer curve, store it to User mode of this unit.

3-band parametric equalizer adjustment

The front and rear speakers can be separately adjusted by selecting the desired 3 frequency bands from 16 frequencies. (Fig. 6)

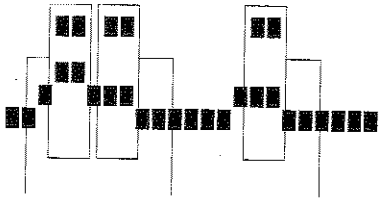

Fig. 6

Frequency point:
20 Hz to 20 kHz (a total of 16 frequency points at intervals of 2/3 octave)
Level adjustment range:
−12 dB to +12 dB (2 dB/step)

1. **Call the desired equalizer curve from those stored in factory mode.**
   (See page 7.)
2. **Press button [21] for more than 2 seconds to change to P.EQ 2 mode.**
3. **Press button [14] for more than 2 seconds to select Front or Rear.**
   Front changes to Rear and vice versa every time the button is pressed for more than 2 seconds.

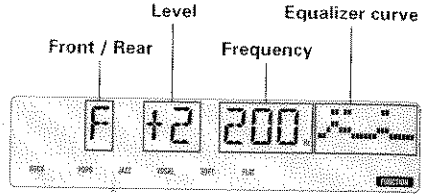

Fig. 7

4. **Use button [17] to select the band to be adjusted. (Fig. 6)**
   The frequency changes to a lower band every time the (◄◄) side of the button is pressed for more than 2 seconds.
   BAND 1 ← BAND 2 ← BAND 3
   The frequency changes to a higher band every time the (►►) side of the button is pressed for more than 2 seconds.
   BAND 1 → BAND 2 → BAND 3
5. **Use button [17] to select the frequency to be adjusted.**
   The frequency decreases every time the (◄◄) side of the button is pressed. The frequency increases every time the (►►) side of the button is pressed.
6. **Use button [16] to adjust the level.**
   Pressing the (▲) side of the button increases the level. Pressing the (▼) side of the button decreases the level. (Display shows "-6" ~ "+6".)

7. **Adjust other bands in the same manner.**
Repeat steps 4 to 6 to obtain desired sound quality.

8. **Change to either Front or Rear to set the equalizer curve in the same manner.**
Repeat steps 3 to 7.

9. **Store the adjusted equalizer curve.**
(Refer to following section.)
- The adjusted equalizer curve will be reset, if another equalizer curve is called. To preserve the adjusted equalizer curve, store it to User mode of this unit.

Storing the equalizer curves (User mode)

In user mode, the adjusted equalizer curves can be stored with adjusted level of bass/treble, and can be called.

1. **Adjust the equalizer curves according to your preference.**
   - See page 8 for details of nuance control adjustment.
   - See page 8 for details of adjustment of the 3-band parametric equalizer.
2. **Press button [21] to change B/T mode.**
(See page 5.)
3. **Adjust the Bass/Treble.**
(Refer to following section.)
4. **Press button [21] to change to P.EQ mode.**
5. **Press either one of buttons ⑦ to ⑫ of [10] for more than 2 seconds to store the equalizer curve.**
"User mode (No.)" and then "MEMORY" light up in the display [4] to indicate completion of data storage.

Note:
- In P.EQ mode, the equalizer curve can be stored using either P.EQ 1 or P.EQ 2 display.
- When the equalizer curve is stored, setting of its bass/treble will also be stored.
- See "Calling the equalizer curve" on page 7 for how to call stored equalizer curve.

Using the Parametric Bass/Treble (B/T)

Adjusting bass/treble

With the parametric bass/treble function, the frequency that is used as a point for level adjustment of bass/treble can be selected from 4 frequencies according to your preference. In addition, the front and rear speakers can be adjusted separately.

Bass: 80 Hz, 125 Hz, 200 Hz, 315 Hz
Treble: 3.15 kHz, 5 kHz, 8 kHz, 12.5 kHz
Level adjustment range:
−12 dB to +12 dB (2 dB/step)

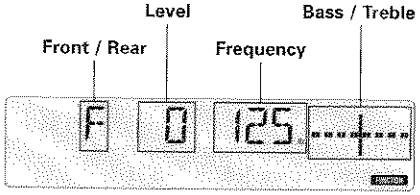

Fig. 8

1. **Press button [21] to change to B/T mode.**
(See page 5.)
   - This mode will be canceled if no operation is made within 8 seconds. Start performing the subsequent operation within 8 seconds.

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2. **Press button [14] for more than 2 seconds to select Front or Rear.**
Front changes to Rear and vice versa every time the button is pressed for more than 2 seconds.

3. **Use button [17] to select bass or treble to be adjusted.**
Pressing the (◀◀) side of the button for more than 2 seconds changes the system to bass mode. Pressing the (▶▶) side of the button for more than 2 seconds changes the system to treble mode.

4. **Use button [17] to adjust the frequency point.**
The frequency decreases every time the (◀◀) side of the button is pressed. The frequency increases every time the (▶▶) side of the button is pressed.

5. **Use button [16] to adjust the level.**
Pressing the (▲) side of the button increases the level. Pressing the (▼) side of the button decreases the level.
(Display shows "–6" ~ "+6".)

6. **Change to either bass or treble to make adjustment in the same manner.**
Repeat steps 3 to 5.

7. **Change to either Front or Rear to make adjustment in the same manner.**
Repeat steps 2 to 6.

8. **Store the equalizer curve, including the adjusted bass/treble.**
After performing steps 1 to 7, press button [21] to change to P.EQ mode and store the data to User mode.
(See "Storing the equalizer curves" on page 9.)
- The system changes to the normal display approximately 8 seconds after operation.

Using the Listening Position Selector (POSI)

Setting the listening position

The system sets the listening position according to the positions of the passengers.

1. **Press button [21] to change to POSI mode.**
(See page 5.)
- This mode will be canceled if no operation is made within 8 seconds. Start performing the subsequent operation within 8 seconds.

2. **Use buttons [16] and [17] to set the position according to the listener.**
POSI for the front seats switches ON/OFF every time the (▲) side of the button [16] is pressed. (POSI OFF ⇄ POSI F)
POSI for the front and rear seats switches ON/OFF every time the (▼) side of the button [16] is pressed.
(POSI OFF ⇄ POSI ALL)
POSI for the driver's seat (steering located on the right side) switches ON/OFF every time the (▶▶) side of the button [17] is pressed.
(POSI OFF ⇄ POSI FR)
POSI for the driver's seat (steering located on the left side) switches ON/OFF every time the (◀◀) side of the button [17] is pressed. (POSI OFF ⇄ POSI FL)
- The system changes to the normal display approximately 8 seconds after operation.

Using the Audition Function

Turning the Audition function to ON while listening to audio tapes or CDs will decrease the voice volume of the singer.

1. Press button [21] to change to SFC mode
(See page 5.)
- This mode will be canceled if no operation is made within 8 seconds. Start performing the subsequent operation within 8 seconds.

2. Call the Audition function.

Operation on this unit:
Press button ⑥ of [11]. Pressing the button again will cancel the function.

Operation via remote control unit:
Use button [17] to call the Audition function by changing the sound field programs.
SFC OFF ⇄ STUDIO ⇄ CLUB ⇄ JAZZCLUB ⇄ CONCERT ⇄ STADIUM ⇄ AUDITION

Note:
- The audition function only works during tape or CD playback. This function does not work while receiving radio broadcasts.
- The audition function works with tunes recorded in stereo mode. (This function does not work with tunes recorded in monaural mode.)
- With some tunes, the voice of singer remains even though they are recorded in stereo mode. If the voice was recorded with echo, the echo will remain and the voice of singer may be heard with delayed timing.
- The audition function does not work with multiplex karaoke CDs.

Using the Automatic Sound Levelizer

During driving, noise in the car changes according to the driving speed and road conditions. The automatic sound levelizer (ASL) monitors such varying noise and automatically increases the sound volume, if this noise becomes greater. The sensitivity (variation of sound volume to noise level) of ASL can be set to one of 3 levels. Choose a desired sensitivity level.

1. Press button [15] to change to ASL mode.
The display switches in the sequence as shown below every time the button is pressed.
FAD 0 → ASL OFF (ASL mode) → 80 Hz 0 → LOUD OFF
- The above display will be canceled if no operation is made within 8 seconds. Start performing the subsequent operation within 8 seconds.

2. Press button [15] for more than 2 seconds to select the ASL function.
The display will change ASL OFF → ASL MID.
Pressing button [15] for more than 2 seconds once again, will turn off the ASL function.

3. Use the (▲) and (▼) sides of button [16] to adjust the sensitivity level.
The level increases in the following sequence every time the (▲) side of the button is pressed.
ASL LOW → ASL MID → ASL HIGH
The level decreases in the following sequence every time the (▼) side of the button is pressed.
ASL HIGH → ASL MID → ASL LOW

Note:

- Sound may be distorted when the sound volume has been increased too high by the ASL function. In such a case, decrease the sound volume by using button [1] or [18].

Using the Sub-woofer Function

For use with sub-woofer speakers, switch this unit to Sub-woofer ON (see the owner's manual of the head unit).

Switching the Phase of Sub-woofer Output

1. Press button [15] to change to Sub-woofer mode.
The display switches in the sequence as shown below every time the button is pressed.
FAD 0 → ASL OFF → 80 Hz 0 (Sub-woofer mode) → LOUD OFF

- The above display will be canceled if no operation is made within 8 seconds. Start performing the subsequent operation within 8 seconds.

2. Press button [14] for more than 2 seconds.
The sub-woofer output phase toggles beween "0°" (displayed as "PHASE N") and "180°" (displayed as "PHASE R") every time the button is pressed for more than 2 seconds.
Change the phase according to your choice.

Note:

- The system can be switched to Sub-woofer mode only when this unit is set to Sub-woofer ON.

Specifications

General

Power source ..... 14.4 V DC (10.8 — 15.6 V allowable)
Grounding system ..... Negative type
Dimensions ..... 190 (W) × 28.5 (H) × 126 (D) mm
Weight ..... 0.6 kg

Equalizer

Tone controls (parametric)
  Frequency (Bass) ..... 80 Hz, 100 Hz, 200 Hz, 315 Hz
  (Treble) ..... 3.15 kHz, 5 kHz, 8 kHz, 12.5 kHz
  Equalization range ..... ±12 dB
Equalizer
  (3 band parametric EQ)
    Frequency ..... 20 Hz, 31.5 Hz, 50 Hz, 80 Hz, 125 Hz, 200 Hz, 315 Hz, 500 Hz, 800 Hz, 1.25 kHz, 2 kHz, 3.15 kHz, 5 kHz, 8 kHz, 12.5 kHz, 20 kHz
    Equalization range ..... ±12 dB
Loudness contour ..... +10 dB (100 Hz), +6.5 dB (10 kHz)
Sub-woofer output
  Frequency ..... 50 Hz, 80 Hz, 125 Hz
  Slope ..... −12 dB/oct
  Level ..... ±12 dB
  Phase ..... 0°, 180°
Distortion ..... 0.01% (1 kHz, 500 mV, 20 kHz LPF)
Frequency response ..... 20 — 20,000 Hz (0, −1 dB)
Signal-to-noise ratio ..... 90 dB (IEC-A network)
Input level/Impedande ..... 500 mV/22 kΩ
Output level/Impedance ..... 500 mV/1 kΩ

Note:

Specifications and the design are subject to possible modification without prior notice due to improvements.

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Printed in Japan
Imprimé au Japon
<CRD1817-A>EW

<94K01E9T01>